IN THE CLAIMS:

Please cancel claims 1-44 without prejudice to, or disclaimer of, the subject matter contained therein, and add new claims 45-92, as indicated in the following listing of claims:

1. - 44. (Cancelled)

45. (New) A method for determining the presence or amount of an analyte in a sample suspected of containing said analyte, said method comprising:

a) providing a combination comprising

1) said sample suspected of containing said analyte,

2) a photosensitizer capable in its excited state of activating oxygen to a singlet state, and

3) a composition comprising

i) a metal chelate comprising europium, terbium, dysprosium, samarium, osmium, or ruthenium, in at least a hexacoordinated state, and

ii) a compound having a structural portion that is a carbon-carbon double bond,

wherein one carbon of the carbon-carbon double bond is substituted with an aryl group and an oxygen group,

wherein the other carbon of the carbon-carbon double bond is substituted with an aryl group and an oxygen, sulfur, or nitrogen,

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wherein one of the aryl groups is electron donating with respect to the other;

b) treating said combination with light or a reactive compound to excite said photosensitizer and cause it to form a singlet state of oxygen; and

c) detecting the amount of luminescence emitted from said combination, the presence or amount of said lumination being related to the presence or amount of said analyte in said sample.

46. (New) The method of claim 45, wherein said composition further comprises a particulate material.

47. (New) The method of claim 46, wherein the particulate material is a latex.

48. (New) The method of claim 47, wherein at least one of the components of said composition are associated with said latex particulate material.

49. (New) The method of claim 47, wherein all of the components of said composition is associated with said latex particulate material.

50. (New) The method of claim 45, wherein said photosensitizer and at least one of said metal chelate and said compound are independently associated with a particulate material.

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51. (New) The method of claim 50, wherein both of said metal chelate and said compound are associated with the same particulate material.

52. (New) The method of claim 50, wherein said particulate material is a latex.

53. (New) The method of claim 50, wherein a specific binding pair member is individually associated with each of said particulate materials, said specific binding pair member being independently selected for each of said latex particulate materials.

54. (New) The method of claim 45, wherein one or both of said photosensitizer and said compound are associated with a specific binding pair member, said specific binding pair member being independently selected for each of said photosensitizer and said compound.

55. (New) The method of claim 45, wherein said compound reacts with said singlet state of oxygen, causing said compound to luminesce.

56. (New) The method of claim 55, wherein said metal chelate absorbs the luminescence emitted from said compound, and luminesces at a wavelength that is different than the wavelength of the luminescence emitted from said compound.

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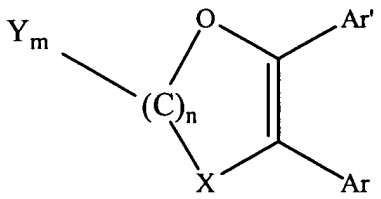
57. (New) The method of claim 45, wherein the compound has a structure represented by the following formula:



wherein X is O, S, or NR', wherein R' is alkyl or aryl, n is 1-4, and Ar and Ar' are independently aryl, wherein one of Ar or AR' is electron donating with respect to the other and Y is hydrogen or an organic radical comprising C, O, N, S, or P, and m is 0-2.

58. (New) The method of claim 57, wherein said composition further comprises a particulate material.

59. (New) The method of claim 58, wherein the particulate material is a latex.

60. (New) The method of claim 59, wherein at least one of the components of said composition is associated with said latex particulate material.

61. (New) The method of claim 59, wherein all of the components of said composition are associated with said latex particulate material.

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62. (New) The method of claim 57, wherein said photosensitizer and at least one of said metal chelate and said compound are independently associated with at least one particulate material.

63. (New) The method of claim 62, wherein both of said metal chelate and said compound are associated with the same particulate material.

64. (New) The method of claim 62, wherein said particulate material is a latex.

65. (New) The method of claim 62, wherein a specific binding pair member is individually associated with each of said particulate materials, said specific binding pair member being independently selected for each of said latex particulate materials.

66. (New) The method of claim 57, wherein one or both of said photosensitizer and said compound are associated with a specific binding pair member, said specific binding pair member being independently selected for each of said photosensitizer and said compound.

67. (New) The method of claim 57, wherein said compound reacts with said singlet state of oxygen, causing said compound to luminesce.

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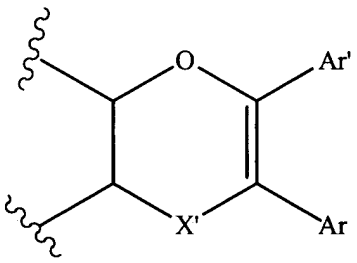
68. (New) The method of claim 57, wherein said metal chelate absorbs the luminescence emitted from said compound, and luminesces at a wavelength that is different than the wavelength of the luminescence emitted from said compound.

69. (New) The method of claim 45, wherein the compound has a structure represented by the following formula:



wherein X' is O, S, or N, and the valency of N is completed with hydrogen or an organic radical comprising C, O, N, S, and P, and

wherein Ar and Ar' are independently aryl, and one of Ar or Ar' is electron donating with respect to the other, and

wherein the wavy lines are hydrogen, an organic radical, or are taken together to form a ring,

said compound being capable of undergoing a chemical reaction with singlet oxygen to form a metastable intermediate that can decompose with the emission of light within the wavelength range of 250 to 1200 nm.

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70. (New) The method of claim 69, wherein said composition further comprises a particulate material.

71. (New) The method of claim 70, wherein the particulate material is a latex.

72. (New) The method of claim 71, wherein at least one of the components of said composition is associated with said latex particulate material.

73. (New) The method of claim 71, wherein all of the components of said composition are associated with said latex particulate material.

74. (New) The method of claim 69, wherein said photosensitizer and at least one of said metal chelate and said compound are independently associated with a particulate material.

75. (New) The method of claim 74, wherein both of said metal chelate and said compound are associated with the same particulate material.

76. (New) The method of claim 74, wherein said particulate material is a latex.

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77. (New) The method of claim 74, wherein a specific binding pair member is individually associated with each of said particulate materials, said specific binding pair member being independently selected for each of said latex particulate materials.

78. (New) The method of claim 69, wherein one or both of said photosensitizer and said compound are associated with a specific binding pair member, said specific binding pair member being independently selected for each of said photosensitizer and said compound.

79. (New) The method of claim 69, wherein said compound reacts with said singlet state of oxygen, causing said compound to luminesce.

80. (New) The method of claim 79, wherein said metal chelate absorbs the luminescence emitted from said compound, and luminesces at a wavelength that is different than the wavelength of the luminescence emitted from said compound.

81. (New) The method of claim 45, wherein the compound has a structure represented by the following formula:

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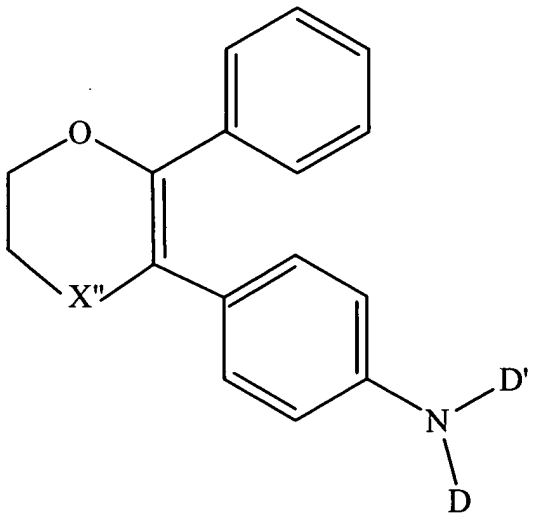

wherein X" is S or NR', wherein R' is alkyl or aryl, and D and D' are independently selected from alkyl and alkyl radical groups.

82. (New) The method of claim 81, wherein said composition further comprises a particulate material.

83. (New) The method of claim 82, wherein the particulate material is a latex.

84. (New) The method of claim 83, wherein at least one of the components of said composition is associated with said latex particulate material.

85. (New) The method of claim 83, wherein all of the components of said composition are associated with said latex particulate material.

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86. (New) The method of claim 81, wherein said photosensitizer and at least one of said metal chelate and said compound are independently associated with a particulate material.

87. (New) The method of claim 86, wherein both of said metal chelate and said compound are associated with the same particulate material.

88. (New) The method of claim 86, wherein said particulate material is a latex.

89. (New) The method of claim 86, wherein a specific binding pair member is individually associated with each of said particulate materials, said specific binding pair member being independently selected for each of said latex particulate materials.

90. (New) The method of claim 81, wherein one or both of said photosensitizer and said compound are associated with a specific binding pair member, said specific binding pair member being independently selected for each of said photosensitizer and said compound.

91. (New) The method of claim 81, wherein said compound reacts with said singlet state of oxygen, causing said compound to luminesce.

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92. (New) The method of claim 91, wherein said metal chelate absorbs the luminescence emitted from said compound, and luminesces at a wavelength that is different than the wavelength of the luminescence emitted from said compound.

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